Euchlaena and maize are rather closely related to one another, and cross spontaneously. Seed of the former imported from Mexico is often obviously hybridized. That from Durango, whence COLLINS and KEMPTON got their strain, is so impure that the parent of their hybrid is not free from suspicion of contamination. A priori, therefore, we should expect similarity of behavior in the hybrids between these two closely related plants and the distantly related *Tripsacum*. Nevertheless, all the plants of *Tripsacum*×*Mais* thus far raised have shown maternal characters only, in marked contrast to the paternal characters of the corresponding hybrid *Tripsacum*×*Euchlaena*. More first generation plants are greatly to be desired, but there is difficulty in getting them because the parent species can seldom be brought into flower simultaneously.

The authors lead us to expect cytological data bearing on the question raised by their very important discovery.—H. H. BARTLETT.

Negative osmosis.—In osmotic experiments it has been found that the flow of water is not always from the less concentrated toward the more concentrated solution. Several cases have been reported in which an opposite flow of water occurred, or in which a movement of water was observed in dealing with solutions with the same osmotic pressure. This is called negative or abnormal osmosis. FREUNDLICH[20] has given us a discussion of these experiments, has defined the conditions under which abnormal osmosis can take place, and has dealt with the cause of it. It appears that such movements of water are caused by the development of an electric current through the membrane, and the water moves in an electroendosmotic manner in the current. The generation of this current and the consequent electroendosmosis can take place in two sets of conditions: (1) when the membrane is permeable to both solvent and solute the ions of the electrolyte are adsorbed by the membrane, their transport numbers changed, and a difference of electric potential on opposite sides of the membrane established, which leads to the starting of an electric current; (2) when the membrane allows only one of the ions of the electrolyte to pass through, the other ion being held back. This semipermeability toward one ion leads to a difference of potential, an electric current is established, and water moves across the membrane by electroendosmosis. This can take place only when the electrolytes on opposite sides of the membrane are different and are such that the ions may react with each other and set free electrical changes.—F. E. DENNY.

Growth in Laminariaceae.—Miss FALLIS[21] reports experimental data on the growth of several species of Laminariaceae. She worked on species of *Laminaria*, *Agarum*, *Cymathaere*, *Egregia*, *Alaria*, and *Nereocystis*. She found

[20] FREUNDLICH, H., Über abnorme Osmosen. Kolloid. Zeitschr. **18**:11–16. 1916.

[21] FALLIS, ANNIE L., Growth in some Laminariaceae. Puget Sound Marine Sta. Publ. **1**:137–155. *pls. 25–28*. 1916.

by experiment that the plants grow as well suspended from a raft by means of cloth strings as they do when attached naturally to the rocks by their own holdfasts. She found also that the removal of the holdfast and even of a considerable portion of the stipe does not affect the growth of the remainder of the plant. The removal of the tip of the blade produces only a negligible effect so long as the basal portion is left intact. Pieces of the blades even as small as 1 mm. square were found to grow when placed in a cloth bag attached to a raft. In kelps having a very short stipe it was found that the region of greatest growth in the post-juvenile stages is near the base of the blade, the main growth of the stipe occurring during the younger stages. She found that the kelps experimented upon grow almost twice as rapidly during the daytime as during the night.

The results reported coordinate well with the small degree of physiological specialization of parts that is found in such genera as *Laminaria* and other leaflike kelps. The data are interpreted largely from the viewpoint of their bearing on the location of the region of greatest growth. Only slight attention is given to the interpretation of the data in their relation to regeneration, and none at all to their relation to coordination.—GEORGE B. RIGG.

Taxonomic notes.—BRANDEGEE[22] has described new species in *Aristolochia* (2), *Jatropha*, *Lycium*, *Galvezia*, *Maximowiczia*, and *Orobanche* from Lower California; in *Aristolochia* and *Asclepias* from Mexico; and in *Sedum* and *Antirrhinum* from California.

MAXON,[23] in continuation of his studies of tropical American ferns, has presented three groups of *Polypodium*, "whose species have for the most part been greatly misunderstood." One of these groups is *P. trichomanoides* and its American allies, including a critical discussion of 26 species. Another group is *P. furfuraceum* and related species, including 21 species, 5 of which are new. The third group is *P. squammatum* and its allies, including 17 species, 5 of which are new. In addition to the new species in these groups, 5 additional new species of *Polypodium* are described, and 2 new species of *Notholaena*.

MILLSPAUGH,[24] in continuation of his studies of North American Euphorbiaceae, has recognized the following segregates from *Euphorbia: Chamaesyce* S. F. Gray, with 9 new species and 84 old ones; *Eumecanthus* Kl. and Gke., to which 41 species are transferred; *Aklema* Raf., to which 19 species are transferred. New species are also described in *Acalypha* (2), *Croton* (3), and *Tragia*.—J. M. C.

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[22] BRANDEGEE, T. S., Species novae vel minus cognitae. Univ. Calif. Publ. Bot. **6**:357–361. 1916.

[23] MAXON, WILLIAM R., Studies of tropical American ferns. no. 6. Contrib. U.S. Nat. Herb. **17**:541–608. *pls. 32–43.* 1916.

[24] MILLSPAUGH, C. F., Contributions to North American Euphorbiaceae VI. Publ. Field Mus. Nat. Hist. Bot. Series **2**:401–420. 1916.